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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN BARRUS, KURT PIERSOL, and STEPHEN SAVITZKY

Appeal 2009-007793
Application 10/727,199¹
Technology Center 2600

Before JOSEPH F. RUGGIERO, MARC S. HOFF,
and BRADLEY W. BAUMEISTER, *Administrative Patent Judges*.

HOFF, *Administrative Patent Judge*.

DECISION ON APPEAL²

¹ The real party in interest is Ricoh Co., Ltd.

² The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from a Final Rejection of claims 1, 4-8, 10-12, 15-17, 19, 22, 25, 27, 29, 30, 34-40, 42-44, and 46-49. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

Appellants' invention relates to a multi-projector display system for displaying at least one high resolution image in a window through a workspace display image without necessarily enabling high resolution in the remainder of the workspace display image (Abstract). A workspace projector generates the workspace display image from an image source (Spec., ¶ [0028]). The workspace display image includes a blank area (an area absent of light) corresponding to the window for the high resolution image projected by at least one high resolution window projector (Spec. ¶¶ [0031-33]). When the user selects a window, making the window "active" or the "focus window," the resolution projector ceases to display the previous high resolution image and the high resolution projector is shifted by a control mechanism to be pointed to project a high resolution image at the new active window (Spec. ¶ [0034]).

Claim 1 is exemplary:

1. A multi-projector display system for displaying on a screen a display image corresponding to a source image including at least one window, comprising:
 - a window projector, for displaying, at a display location on the screen, a first portion of the display image corresponding to a movable window from the source image;
 - a workspace projector, for displaying on the screen a second portion of the display image comprising a blank area corresponding to the display location of the movable window from the source image, wherein no light is projected in the blank area by the workspace projector;

an input device, for receiving user input changing the source image;
and

a control mechanism, coupled to the window projector and input device, for, responsive to the input device receiving a user command to drag the moveable window from a first location to a second location in the source image, controlling the window projector to affect a change in the display location on the screen of the first portion of the display image.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Fisher	US 5,326,266	July 5, 1994
Lechner	US 5,487,665	Jan. 30, 1996
Dugdale	US 5,707,128	Jan. 13, 1998
Surati	US 6,456,339 B1	Sep. 24, 2002
Nakagawa	US 2004/0095314	May 20, 2004
Spletzer	US 6,919,909 B1	July 19, 2005

Claims 1, 4-8, 10-12, 15-17, 19, 27, 29-30, 34-40, and 42-44 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakagawa in view of Spletzer and Lechner.

Claims 46 and 48 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakagawa in view of Spletzer, Lechner, and Dugdale.

Claims 22 and 25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakagawa in view of Spletzer, Lechner, and Fisher.

Claim 47 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakagawa in view of Spletzer, Lechner, Dugdale, and Fisher.

Claim 49 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakagawa in view of Spletzer, Lechner, Fisher, and Surati.

ISSUES

Appellants contend that the combination of the cited references lacks at least “an input device, for receiving user input changing the source image” (App. Br. 10 and 19). Appellants assert that since the Examiner has provided no rationale for modifying Nakagawa such that the user input changes the source image, the Examiner has applied improper hindsight reasoning (App. Br. 9, 15, and 18). Appellants argue further that Spletzer does not disclose any ability or mechanism for showing how user input might “affect a change to a source image” (App. Br. 14). In addition, Appellants contend that neither Spletzer nor Dugdale discloses a control mechanism (App. Br. 14-15 and 17). Appellants assert further that the image zoom/sizing disclosed in Dugdale is “for the target image to appear the proper size,” not “responsive to the input device receiving a user command to resize the resizable window from the source image” (App. Br. 17). Appellants argue that the zoom function of Dugdale would not be effective for resizing a window (Reply Br. 6). Finally, Appellants contend that none of the references disclose “a plurality of workspace projectors, for collectively displaying a second portion of the display image comprising a blank area...wherein no seam is visible in the blank area collectively displayed by the plurality of workspace projectors” as claimed (App. Br. 20).

Appellants' contentions present us with the following five issues:

1. Do the references disclose a multi-projector display system having “an input device, for receiving user input changing the source image”?

2. Do the references teach or suggest a multi-projector display system having “a control mechanism . . . for . . . controlling the window and workspace projectors such that the window projector displays the second portion of the image at the second display location and the workspace projector displays the first portion of the image at the first display location”?

3. Do the references disclose a multi-projector display system having a control mechanism coupled to a window projector and an input device “for, responsive to the input device receiving a user command to drag the window from one location to another in the source image, controlling the window projector to affect a change in the display location of the first portion of the display image”?

4. Do the references disclose a multi-projector display system having a control mechanism “responsive to [an] input device receiving a user command to resize the resizable window from the source image, controlling [a] window projector to affect a change in the display location of the first portion of the display image”?

5. Do the references disclose a multi-projector display system having “a plurality of workspace projectors, for collectively displaying a second portion of the display image comprising a blank area corresponding to the display location of the movable window, wherein no light is projected in the blank area by the workspace projector, and wherein no seam is visible in the blank area collectively displayed by the plurality of workspace projectors”?

FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

The Invention

1. The arrangement of projectors 101A-C generates the composite image 104. Specifically, projector 101C generates the work space display image 102, while projector 101A generates window 103A (Fig. 1; Spec. ¶¶ [0028-29]).

2. When window 103A is resized or moved to another position on the composite image by a user, control computer 106 moves mirror 301 and zoom lens mechanism 303 so that high resolution projector 101A can continue to display the window 103 having focus (Spec. ¶ [0053]). The high-resolution portion of the display within window 103 moves naturally and in an intuitive manner when the user moves or resizes the window 103 (Spec. ¶ [0056]).

3. Projectors 101A-C are connected to image source 105 (Fig. 1; ¶ [0028]).

Nakagawa

4. Nakagawa discloses a human interactive type electronic whiteboard display system where a user can use a pointer to tap and drag a window in a window shift operation. The user points using a pen-like member to a predetermined region on the display, such as a title bar area in the window, and “drags” the pen-like member on the display panel toward a desired area where the window is to be shifted (Figs. 4, 9A, and 9B; Abstract, ¶ [0033]). A control unit 43 is used to control the movement of a window during the window shift function (Fig. 4, ¶ [0049]).

Spletzer

5. Spletzer discloses a method and apparatus for displaying two portions of an image at two resolutions. An entire display image can be displayed at a first resolution and a second image may be displayed at a second higher resolution (col. 1, ll. 56-58). The second or subset image can change with time both in content (as the image itself changes) and in relation to the entire image (as the subset deserving attention moves relative to the image). Motion of the second image can follow the motion of a pointing device (Fig. 1; col. 2, ll. 11-29).

Lechner

6. Lechner discloses a visual display system wherein the background image is displayed by a background image projection means 20 including at least one background image projector (Figs. 1 and 2; col. 5, ll. 1-17). The visual display system 10 includes a blanking means 42 that is responsive to a deflection means 40 for blanking the inset image projector 29 while a subraster block is positioned relative to the background image. In addition, the blanking means 42 blanks the portion of the background image corresponding to the position of each of the inset images. Thereby, the background and inset images are not displayed at the same position of the display screen (col. 7, ll. 18-40). The inset image processing means includes a control means 44 for enabling only one of the pluralities of inset image projectors at a time (col. 7, ll. 54-64).

Dugdale

7. Dugdale discloses a target projector display system 50 that includes a simulator visual display system 30 (Fig. 2). Specifically, system 50 includes a projector 52 which projects the target image supplied by target

image data from image generator 54. A lens system 56 performs the zoom and focus functions necessary for the target image to appear the proper size. A lens system 56 includes a stationary fold mirror 58 which folds the target image down 90 degrees. Driven by servo motors 62, a slewable fold-mirror 60 moves the target image in azimuth (AZ) and in elevation (EL) (col. 3, ll. 4-17).

Fisher

8. Fisher discloses the combination of inset and background images by displacing the relative areas of projection in a vibrating orbital pattern. Thereby, the images are combined opto/mechanically using a hard edge mirror that is orbited in its plane at a high frequency to accomplish a blended transition. The visual result is an effectively blended region defined only by amplitude of the vibration (col. 1, l. 66- col. 2, l. 5).

PRINCIPLE OF LAW

On the issue of obviousness, the Supreme Court has stated that “the obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007). Further, the Court stated “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 416.

ANALYSIS

Claims 1, 5-8, 10-12, 15-17, 19, 27 and 29

We select claim 1 as representative of this group of claims, pursuant to our authority under 37 C.F.R. § 41.37(c)(1)(vii).

Representative claim 1 recites a multi-projector display system having “an input device, for receiving user input changing the source image.”

We do not consider Appellants’ arguments to be persuasive to show Examiner error. We agree with the Examiner’s finding that Nakagawa discloses the user input changes the “source image” when the window is dragged (Ans. 5).

Looking to the Specification for a definition of the term “source image,” we find that, although the Specification discloses an image source 105, the Specification nowhere discloses the term “source image” (FF 3). As noted by Appellants in the Summary of Claimed Subject Matter section of the Appeal Brief, “changing the source image” means that when a user moves or resizes a window 103 that currently has focus, control computer 106 moves mirror 301 and zoom lens mechanism 303 so that projector 101A can continue to display the window 103 (App. Br. 3, FF 2). When window 103A moves to another position within the composite image 104, the work space display image must change (FF 1 and 2). Therefore, we interpret the claim language, “changing the source image,” merely to mean changing the work space display image 102 (FF 1 and 2). That is, we understand the term “source image” to mean the information regarding the display image that must inherently be contained within the image source. As noted by the Examiner (Ans. 18-19), any alternative interpretation that distinguishes the “source image” from the “display image” would raise the issue of whether Appellants’ Specification provides adequate written description for claim 1.

Nakagawa discloses a human interactive type electronic whiteboard display system where a user can use a pointer to tap and drag a window in a window shift operation (FF 4). The user points using a pen-like member to a

predetermined region on the display, such as a title bar area in the window, and “drags” the pen-like member on the display panel toward a desired area where the window is to be shifted (FF 4).

We agree with the Examiner’s finding that dragging windows using a mouse, i.e. user input, was well known in the art before applicant’s invention (Ans. 17). Similar to the claimed invention, Nakagawa discloses that when a user drags/modifies a window using the pointing device that the display is affected to move the window and the image source is changed (FF 4).

Therefore, we find that the Examiner has established the prima facie obviousness of the claims, because the combination of Nakagawa, Spletzer, and Lechner discloses a multi-projector display system having “an input device, for receiving user input changing the source image.” As a result, we will sustain the Examiner’s § 103 rejection of representative claim 1 and that of claims 5-8, 10-12, 15-17, 19, 27 and 29.

Claims 4, 30, 34-37, 39-40, and 42-44

We select claim 4 as representative of this group of claims, pursuant to our authority under 37 C.F.R. § 41.37(c)(1)(vii).

Representative claim 4 recites a multi-projector display system having “a control mechanism . . . for . . . controlling the window and workspace projectors such that the window projector displays the second portion of the image at the second display location and the workspace projector displays the first portion of the image at the first display location.”

We do not consider Appellants’ arguments to be persuasive to show Examiner error. Nakagawa discloses a control unit 43 that controls the movement of a window during a window shift function (FF 4). Therefore, Nakagawa discloses a control mechanism that is responsive to a user input

device which issues a command to drag the moveable window from a first location to a second location in the source image (FF 4).

Although the Examiner relies upon the teachings of all three references, the Examiner does not rely upon Spletzer for disclosing the control mechanism nor how “user input might affect a change to a source image” (App. Br. 14; Ans. 20). Spletzer discloses two projectors, with one focusing on an area deserving more attention or an active window (FF 5). Modifying the teachings of Nakagawa with Spletzer would result in the user being able to activate a window using a pointing device and thereby, the projector that was previously only displaying the first active window will change to display the second active window (FF 4 and 5). The Examiner further relies upon Lechner for disclosing that the display image includes a blanking means that blanks the portion of the background image corresponding to the position of each of the inset images (Ans. 21; FF 6).

Therefore, we find that the Examiner has established the *prima facie* obviousness of the claims, because the combination of Nakagawa, Spletzer, and Lechner discloses a multi-projector display system having “a control mechanism . . . for . . . controlling the window and workspace projectors such that the window projector displays the second portion of the image at the second display location and the workspace projector displays the first portion of the image at the first display location.” As a result, we will sustain the Examiner’s § 103 rejection of representative claim 4 and that of dependent claims 30, 34-37, 39-40, and 42-44.

Claims 46 and 48

Independent claim 46 recites a multi-projector display system that includes “a control mechanism, coupled to the window projector and the

input device, for, responsive to the input device receiving a user command to resize the resizable window from the source image, controlling the window projector to affect a change in the size of the first portion of the display image.” Independent claim 48 recites a claim limitation similar in scope.

We do not consider Appellants’ arguments to be persuasive to show Examiner error. As noted *supra*, Nakagawa discloses a control mechanism that is responsive to the input device, when the input device issues the user command to drag the moveable window from a first location to a second location in the source image (Ans. 5). Dugdale discloses a target projector display system 50 that includes a lens system 56 that performs zoom and focus functions necessary for a target image to appear the proper size (FF 7).

We agree with the Examiner’s finding that Appellants may not show nonobviousness by attacking references individually. *In re Keller*, 642 F.2d 413 (CCPA 1981) (Ans. 23). Although the Examiner relies upon the teachings of all four references, the Examiner does not rely upon Dugdale for disclosing the control mechanism (App. Br. 17; Ans. 23).

Therefore, we find that the Examiner has established the *prima facie* obviousness of the claims, because the combination of Nakagawa, Spletzer, Lechner, and Dugdale discloses a multi-projector display system having a control mechanism coupled to a window projector and an input device “for, responsive to the input device receiving a user command to resize the resizable window from the source image, controlling the window projector to affect a change in the display location of the first portion of the display image.” As a result, we will sustain the Examiner’s § 103 rejection of claims 46 and 48.

Claims 22, 25, 47, and 49

We select claim 22 as representative of this group of claims, pursuant to our authority under 37 C.F.R. § 41.37(c)(1)(vii).

Independent claim 22 recites “a plurality of workspace projectors, for collectively displaying a second portion of the display image comprising a blank area corresponding to the display location of the movable window, wherein no light is projected in the blank area by the workspace projector, and wherein no seam is visible in the blank area collectively displayed by the plurality of workspace projectors.” Independent claim 25 recites a claim limitation similar in scope.

We do not consider Appellants’ arguments to be persuasive to show Examiner error. The Examiner relies upon the teachings of Lechner to disclose a plurality of workspace projectors (Ans. 26; FF 6). The Examiner does *not* rely upon Fisher to teach the plurality of workspace projectors (Ans. 26). Fisher, however, discloses the combination of inset and background images by displacing the relative areas of projection in a vibrating orbital pattern (FF 8). The visual result is an effectively blended region defined only by amplitude of the vibration (FF 8). Thereby, Fisher discloses a seamless combination of the images.

Therefore, we find that the Examiner has established the prima facie obviousness of the claims, because the combination of Nakagawa, Spletzer, Lechner, and Fisher discloses “a plurality of workspace projectors, for collectively displaying a second portion of the display image comprising a blank area corresponding to the display location of other movable window, wherein no light is projected in the blank area by the workspace projector, and wherein no seam is visible in the blank area collectively displayed by

the plurality of workspace projectors” (Ans. 14). As a result, we will sustain the Examiner’s § 103 rejection of representative claim 22 and that of claims 25, 47, and 49.

CONCLUSIONS

The references disclose a multi-projector display system having “an input device, for receiving user input changing the source image.”

The references suggest a multi-projector display system having “a control mechanism . . . for . . . controlling the window and workspace projectors such that the window projector displays the second portion of the image at the second display location and the workspace projector displays the first portion of the image at the first display location.”

The references disclose a multi-projector display system having a control mechanism coupled to a window projector and an input device “for, responsive to the input device receiving a user command to drag the window from one location to another in the source image, controlling the window projector to affect a change in the display location of the first portion of the display image.”

The references disclose a multi-projector display system having a control mechanism coupled to a window projector and an input device “for, responsive to the input device receiving a user command to resize the resizable window from the source image, controlling the window projector to affect a change in the display location of the first portion of the display image.”

The references disclose a multi-projector display system having “a plurality of workspace projectors, for collectively displaying a second

portion of the display image comprising a blank area corresponding to the display location of the movable window, wherein no light is projected in the blank area by the workspace projector, and wherein no seam is visible in the blank area collectively displayed by the plurality of workspace projectors.”

ORDER

The Examiner’s rejection of claims 1, 4-8, 10-12, 15-17, 19, 22, 25, 27, 29, 30, 34-40, 42-44, and 46-49 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

Appeal 2009-007793
Application 10/727,199

AFFIRMED

ELD

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